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EXAMINER

HOPKINS, ROBERT A

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1724

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/675,146

Applicant(s)

HERING, UWE

Examiner

Robert A. Hopkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 10-14 is/are rejected.
- 7) ☒ Claim(s) 7-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5-13-04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Margraf(4496377).

Margraf teaches a filtering apparatus comprising a crude gas chamber(3), a clean gas chamber(4), an air flow path between the clean gas chamber and crude gas chamber, a first filter element(5) positioned in the air flow path, a first gas discharge device(not shown) configured to direct a first gas stream with particulate therein in the air flow path from the crude gas chamber through the first filter element and into the clean gas chamber, a first shut off device(column 2 lines 36-42) configured to interrupt the first gas stream through the first filter element, a second gas discharge device(14) configured to direct a second gas stream through the first filter element into the crude gas chamber, and a first filter element moving device(13) coupled to the first filter element and configured to move the first filter element in a manner which dislodges the powder particles therefrom.

Claims 1,3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Japanese reference(56-58513).

Japanese reference teaches a filtering apparatus comprising a crude gas chamber(2), a clean gas chamber(5), an air flow path between the clean gas chamber and crude gas chamber, a first filter element(1) positioned in the air flow path, a first gas discharge device(not shown) configured to direct a first gas stream with particulate therein in the air flow path from the crude gas chamber through the first filter element and into the clean gas chamber, a first shut off device(19) configured to interrupt the first gas stream through the first filter element, a second gas discharge device(13) configured to direct a second gas stream through the first filter element into the crude gas chamber, and a first filter element moving device(10) coupled to the first filter element and configured to move the first filter element in a manner which dislodges the powder particles therefrom. Japanese reference further teaches a second filter element(1 in figure 1) arranged in parallel with the first filter element, a second shut off device(19) configured to interrupt the first gas stream through the second filter element, and a second filter element moving device(10) coupled to the second filter element and configured to move the second filter element in a manner which dislodges the powder particles therefrom.

Claims 1,3,4 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by German reference(2304507).

German reference teaches a filtering apparatus comprising a crude gas chamber, a clean gas chamber, an air flow path between the clean gas chamber and crude gas chamber, a first filter element(3) positioned in the air flow path, a first gas discharge device(not shown) configured to direct a first gas stream with particulate

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therein in the air flow path from the crude gas chamber through the first filter element and into the clean gas chamber, a first shut off device(11) configured to interrupt the first gas stream through the first filter element, a second gas discharge device(34) configured to direct a second gas stream through the first filter element into the crude gas chamber, and a first filter element moving device coupled to the first filter element and configured to move the first filter element in a manner which dislodges the powder particles therefrom. German reference further teaches a second filter element(3) arranged in parallel with the first filter element, a second shut off device(11) configured to interrupt the first gas stream through the second filter element, and a second filter element moving device coupled to the second filter element and configured to move the second filter element in a manner which dislodges the powder particles therefrom.

Claim 10 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Koch, II(4303417).

Koch, II teaches a method for cleaning a first filter element(70) of powder particles filtered from a gas within a powder coating apparatus having a crude gas chamber and a clean gas chamber and the first filter element(70) having first and second surface area portions positioned in an air flow path between the crude gas chamber and clean gas chamber, the method comprising directing the gas mixed with the powder from the crude gas chamber through the first filter element into the clean gas chamber, directing a cleaning gas stream(from nozzle 80) through the first filter element in the direction of the crude gas chamber and moving the cleaning gas stream

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between the first and second surface area portions to dislodge the powder from the first filter element.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koch, II(4303417) taken together with Japanese reference(56-58513).

Koch, II teaches a powder coating apparatus comprising a crude gas chamber, a clean gas chamber, an air flow path between the clean gas chamber and crude gas chamber, a first filter element(70) positioned in the air flow path, a first gas discharge device(58) configured to direct a first gas stream with particulate therein in the air flow path from the crude gas chamber through the first filter element and into the clean gas chamber, a second gas discharge device(80) configured to direct a second gas stream through the first filter element into the crude gas chamber. Koch, II is silent as to a first shut off device configured to interrupt the first gas stream through the first filter element and a first filter element moving device coupled to the first filter element and configured to move the first filter element in a manner which dislodges the powder particles therefrom. Japanese reference teaches a filtering apparatus comprising a crude gas chamber(2), a clean gas chamber(5), an air flow path between the clean gas chamber and crude gas chamber, a first filter element(1) positioned in the air flow path,

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a first gas discharge device(not shown) configured to direct a first gas stream with particulate therein in the air flow path from the crude gas chamber through the first filter element and into the clean gas chamber, a first shut off device(19) configured to interrupt the first gas stream through the first filter element, a second gas discharge device(13) configured to direct a second gas stream through the first filter element into the crude gas chamber, and a first filter element moving device(10) coupled to the first filter element and configured to move the first filter element in a manner which dislodges the powder particles therefrom.

It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a first shut off device configured to interrupt the first gas stream through the first filter element of Koch, II so that exhaust gas is not sent through duct member(56) while a reverse cleaning operation is being conducted. It would also have been obvious to someone of ordinary skill in the art at the time of the invention to provide a first filter element moving device coupled to the first filter element of Koch II and configured to move the first filter element in a manner which dislodges the powder particles therefrom in order to provide simultaneous application of vibration and back pressure for more effective cleaning of the filter.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koch,II(4303417) taken together with Japanese reference(56-58513).

Koch, II teaches a method for cleaning a filter element of powder filtered from a gas within a powder coating apparatus having a crude gas chamber and a clean gas chamber and the first filter element positioned in an air flow path between the crude gas

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chamber and clean gas chamber comprising directing the gas mixed with the powder from the crude gas chamber through the first filter element into the clean gas chamber, directing a cleaning gas stream(from nozzle 80) through the first filter element in the direction of the crude gas chamber. Koch , II is silent as to moving the first filter element to dislodge the powder from the first filter element. Japanese reference teaches a filtering apparatus comprising a crude gas chamber(2), a clean gas chamber(5), an air flow path between the clean gas chamber and crude gas chamber, a first filter element(1) positioned in the air flow path, a first gas discharge device(not shown) configured to direct a first gas stream with particulate therein in the air flow path from the crude gas chamber through the first filter element and into the clean gas chamber, a first shut off device(19) configured to interrupt the first gas stream through the first filter element, a second gas discharge device(13) configured to direct a second gas stream through the first filter element into the crude gas chamber, and a first filter element moving device(10) coupled to the first filter element and configured to move the first filter element in a manner which dislodges the powder particles therefrom.

It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a step of moving the first filter element of Koch, II in order to provide simultaneous application of vibration and back pressure for more effective cleaning of the filter.

Japanese reference further teaches wherein moving the filter element comprises vibrating the filter element.



Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koch, II(4303417) taken together with Japanese reference(56-58513).

Koch, II teaches a method for cleaning a filter element of powder filtered from a gas within a powder coating apparatus having a crude gas chamber and a clean gas chamber and the first filter element positioned in an air flow path between the crude gas chamber and clean gas chamber comprising directing the gas mixed with the powder from the crude gas chamber through the first filter element into the clean gas chamber, directing a cleaning gas stream(from nozzle 80) through the first filter element in the direction of the crude gas chamber. Koch , II is silent as to moving the first filter element to dislodge the powder from the first filter element, and interrupting the flow of gas mixed with the powder through the first filter element while maintaining the flow of gas mixed with the powder through the second filter element and is also silent as to a first shut off device configured to interrupt the first gas stream through the first filter element and a first filter element moving device coupled to the first filter element and configured to move the first filter element in a manner which dislodges the powder particles therefrom. Japanese reference teaches a filtering apparatus comprising a crude gas chamber(2), a clean gas chamber(5), an air flow path between the clean gas chamber and crude gas chamber, a first filter element(1) positioned in the air flow path, a first gas discharge device(not shown) configured to direct a first gas stream with particulate therein in the air flow path from the crude gas chamber through the first filter element and into the clean gas chamber, a first shut off device(19) configured to interrupt the first gas stream through the first filter element, a second gas discharge

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device(13) configured to direct a second gas stream through the first filter element into the crude gas chamber, and a first filter element moving device(10) coupled to the first filter element and configured to move the first filter element in a manner which dislodges the powder particles therefrom.

It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a step of moving the first filter element of Koch, II in order to provide simultaneous application of vibration and back pressure for more effective cleaning of the filter. It also would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a step of interrupting the flow of gas mixed with the powder through the first filter element while maintaining the flow of gas mixed with the powder through the second filter element so that exhaust gas is not sent through duct member(56) while a reverse cleaning operation is being conducted.

Claims 2,5,6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese reference(56-58513) taken together with Gregg et al(5421845).

Japanese reference teaches all of the limitations of claim 2,5 but is silent as to wherein the second gas discharge device further comprises a movable(rotatable) nozzle element mounted for movement relative to the first filter element and a drive mechanism coupled with the movable(rotatable) nozzle element and configured to move the nozzle element as the second gas stream is directed to the first filter element. Gregg et al teaches a filtering apparatus including a filter chamber with a first filter element, and a gas discharge device for directing a gas stream through the filter element, wherein the gas discharge device further comprises a movable nozzle element(30) mounted for

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movement relative to the first filter element(24) and a drive mechanism(36) coupled with the movable nozzle element and configured to move the nozzle element as the second gas stream is directed to the first filter element. It would have been obvious to someone of ordinary skill in the art at the time of the invention to substitute a movable nozzle element with drive mechanism for each of the stationary gas discharge nozzles(13) of Japanese reference in order to effectively clean the entire diameter of each filter element(1) of Japanese reference.

Gregg et al further teaches wherein the rotatable nozzle element further comprises an elongated arm with a gas channel therein and a plurality of gas outlet channels(48) directed at the first filter element.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese reference(56-58513) taken together with Schmidt et al(3212643).

Japanese reference teaches all of the limitations of claim 4 but is silent as to wherein the first filter element moving device further comprises a pneumatic cylinder capable of being intermittently charged with pressurized gas, and including a piston rod capable of reciprocating movement within the cylinder as a result of the cylinder being intermittently charged with pressurized gas. Schmidt et al teaches a filtration chamber with at least one filter element , and a filter vibration device including a pneumatic cylinder(48) capable of being intermittently charged with pressurized gas, and including a piston rod(60) capable of reciprocating movement within the cylinder as a result of the cylinder being intermittently charged with pressurized gas(column 4 lines 56-75). It would have been obvious to someone of ordinary skill in the art at the time of the

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invention to substitute a filter element moving device which further comprises a pneumatic cylinder capable of being intermittently charged with pressurized gas, and including a piston rod capable of reciprocating movement within the cylinder as a result of the cylinder being intermittently charged with pressurized gas for the standard vibration device of Japanese reference in order to provide a vibration device which is capable of intermittent operation and a maximum intensity of vibration to the filter element of Japanese reference.

Claim 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Koch, II(4303417) taken together with Gregg et al(5421845).

Koch, II teaches all of the limitations of claim 11 but is silent as to moving the cleaning gas stream in a rotational manner. Gregg et al teaches a filtering apparatus including a filter chamber with a first filter element, and a gas discharge device for directing a gas stream through the filter element, wherein the gas discharge device further comprises a movable nozzle element(30) mounted for movement relative to the first filter element(24) and a drive mechanism(36) coupled with the movable nozzle element and configured to move the nozzle element as the second gas stream is directed to the first filter element. It would have been obvious to someone of ordinary skill in the art at the time of the invention to substitute a movable nozzle element with drive mechanism for the stationary gas discharge nozzles of Koch, II in order to effectively clean the entire diameter of each filter element(1) of the filter of Koch, II.

***Allowable Subject Matter***

Claims 7-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 7 recites "wherein said gas outlet channels are arranged such that said moveable arm can be rotated by the gas flowing out of said gas outlet channels". Gregg et al teaches a rotatable nozzle element connected to a movable arm, wherein the movable arm is rotated by a drive mechanism(36). It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide wherein the gas outlet channels are arranged such that the moveable arm can be rotated by the gas flowing out of said gas outlet channels because Gregg et al does not suggest such a modification.

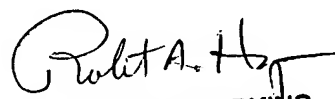
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Friday, 7am-4pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rah  
August 5, 2005

  
ROBERT A. HOPKINS  
PRIMARY EXAMINER  
A.U. 1724